

Filter Strip

Introduced Grass Planting

Conservation Practice Job Sheet

393

Participant Name: _____

INFORMATION ON THIS JOB SHEET IS CONSIDERED TO BE PART OF THE CONTRACT AND/OR CONSERVATION PLAN.

Definition

A strip or area of herbaceous vegetation that removes contaminants from overland flow.

Purpose

Filter strips function by 1) reducing suspended solids and associated contaminants in runoff, 2) reducing dissolved contaminant loadings in runoff and 3) reducing suspended solids and associated contaminants in irrigation tailwater. Filter strips can also be used in restoring, creating, or enhancing herbaceous habitat for wildlife and beneficial insects; and maintaining or enhancing watershed functions and values when strategically placed and seeded so as not to reduce any of the above three primary purposes for which the filter strip was originally planned to address.

Where Used

Filter strips are established where environmentally-sensitive areas need to be protected from sediment, other suspended solids/contaminants or dissolved contaminants in runoff. Multiple filter strips can be strategically located in a watershed to reduce and slow runoff and increase infiltration and groundwater recharge. A filter strip is designated as a vegetated area to treat runoff and is not part of the adjacent cropland rotation. A strip is designed to filter surface sheet flow. Concentrated flows need to be dispersed before water enters a strip. A filter strip is typically



positioned at the down-slope edge of a field or disturbed area. Filter strips are normally only used when adjacent and up-gradient areas have slopes gradients between 1 and 10 percent. To the extent practical, an individual filter strip is placed on the approximate contour, with its upper edge ideally not exceeding a 0.5% gradient (measured perpendicular to the flow length). When establishing a filter strip, consider using vegetation that is tolerant to herbicides used in the adjacent crop rotation.

Establishment Specifications

1. Species, seeding rates, and seeding dates will be according to the Plant Materials Table.
2. Seed will conform to minimum state standards for purity, germination and other features. Seed tags and other information may be requested by NRCS representatives to verify contract compliance.
3. For introduced species, certified seed is required unless there is a documented statewide shortage and the use of uncertified seed is deemed allowable by the State Resource Conservationist. For native grass species certified seed is not required because typically, they are not found in plentiful supplies in Kentucky so certified seed is more the exception than the rule for native grasses.

4. Fertilizer and lime applications, when planned, shall be made according to University of Kentucky recommendations based on a soil test analysis performed consistent with University of Kentucky laboratory soil test procedures.
5. The top edge of the filter strip will be laid out with NRCS or Conservation District assistance
6. Competition control, seedbed preparation and seeding shall be done according to the following information.

Competition Control Before Planting

Competition control is critical to ensuring a good stand of introduced grasses. In most situations this control should begin prior to the seeding and seedbed operations. Either conventional seedbed preparation or herbicide application/s or both may be used to control competition prior to planting introduced grasses and legumes.

Several steps are required to get successful competition control when using a herbicide to eradicate existing vegetation. The first step in killing existing vegetation with herbicides is to remove excessive top growth that may be present. Removal can be accomplished by mowing or grazing the area immediately prior to beginning the recommended herbicide application program. If possible after mowing, remove the hay to allow for better herbicide contact (check program rules to determine if grazing/hay removal is allowed).

The recommended herbicide program may involve a fall application plus a spring application or one or two spring applications. The herbicide applications must be made while the target vegetation is rapidly growing (preferably at a 4 to 6 inch height).

Weed Suppression Table provides some suggested herbicide options for controlling competition prior to planting. Two herbicide applications are normally recommended for dense stands of Fescue or other sod forming species and in other areas where competition may not be controlled by one application.

However, only one application could be used in stands of Fescue and other similar species in cases where the planner determines that competition can be controlled with only one herbicide application.

Seeding and Seedbed Preparation

Important: Regardless of the seeding method used, the seeding depth for most species should never exceed 1/4 to 1/2 inch. Avoid no-till planting or cultipacking planted seedbeds in wet soil since it may result in placing the seed too deep.

No-till establishment is the preferred method since soil disturbance is minimal, thus reducing weed competition and the risk of soil erosion. Conventional seeding may be used for establishment on areas that have been recently cropped, where weedy competition will be lessened and where the risk of soil erosion is minimal.

Conventional Tillage

A seedbed may be prepared by disking two or more times to make a clean, firm seedbed. As a general guide, a seedbed is considered firm when footprints leave no more than a half-inch deep depression. Roll or culti-pack immediately prior to and after seeding to ensure good soil-to-seed contact. Seeds are usually broadcast.

Reduced Tillage

A seedbed may be prepared with a chisel, disk or other similar implement that leaves a significant amount of residue on the surface of the soil. Herbicides are normally used to kill existing vegetation prior to tillage. If using a broadcast seeder, roll or culti-pack immediately prior to and after seeding to ensure good soil-to-seed contact. If using a seed drill, rolling and culti-packing are not necessary. Make sure that the depth of seeding is set correctly for the species being planted.

No Tillage

In no-tillage planting, a seed drill is used to place seed at a prescribed depth (usually between ¼ and ½ inch below the soil surface) with minimal soil disturbance. Some conventional no-till drills have been retro fitted with a fluffy grass seed box. Two common mistakes when no-till planting cool season grasses include pulling the drill too fast and not stopping to check seeding depth often enough.

Operation and maintenance

Mow filter strips as necessary to encourage dense vegetative growth. Avoid mowing between May 15st and August 1st which is the primary nesting season for ground-nesting birds and animals whenever possible. Control undesirable weed species. Inspect and repair after storm events to fill in gullies, remove flow-disrupting sediment accumulation, reseed disturbed areas, and take other measures to prevent concentrated flow into and across the filter strip. Lime and fertilize to soil test recommendations to maintain a vigorous stand. Exclude livestock and vehicular traffic from filter strips during wet periods of the year to reduce compaction that will limit infiltration. This type of traffic should be excluded at all times to the extent practical. Restoration is

required if the filter strip has accumulated sediment to a point that it no longer functions effectively.

All planted species must be taken into consideration when implementing a herbicide treatment. For example, do **not** use a broad-spectrum broadleaf-weed herbicide to control ragweed only to kill all the legumes that were planted also!

If conservation cover is being established under a program, follow management requirements as outlined on the program specific operation and maintenance job sheets or as outlined in the Addition Specification and Notes Section located at the end of this document.

Specifications

Site-specific requirements and additional provisions are listed on the next pages. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See practice standard Filter Strip, code 393.

Filter Strip – Job Sheet

Landowner _____ Field
 number _____

| Weed Suppression. This table contains several options for controlling competing grass and weed vegetation with burn down herbicides* prior to planting introduced grasses. Remove excess vegetation prior to application if needed. Apply herbicide after vegetation has re-growth of at least 4 to 6 inches. | | | | |
|---|---------------------------|--------------------------------|--|---|
| Applied | Option | Current Condition (circle one) | Timing | Method |
| <input checked="" type="checkbox"/> | 1 (Single Application) | Cropland Or Grassland | Spring (April) | Apply just prior to planting. Herbicide Rate: 26-39 ounces of glyphosate active ingredient (a.i.) per acre.* |
| <input checked="" type="checkbox"/> | 2 (Single Application) | Cropland Or Grassland | Fall (Sept/Oct) | Apply just prior to planting. Herbicide Rate: 13-20 ounces of glyphosate ingredient (a.i.) per acre.* |
| <input checked="" type="checkbox"/> | 3 (Two Applications) | Cropland Or Grassland | Spring (April) | Apply first application will be several weeks before planting and second application should be applied one to two weeks prior to planting. <ul style="list-style-type: none"> 1st Herbicide Application Rate: 26-39 ounces of glyphosate ingredient (a.i.) per acre.* 2nd Herbicide Application Rate: 6.5-13 ounces of glyphosate ingredient (a.i.) per acre.* |
| <input checked="" type="checkbox"/> | 4 (Two Applications) | Cropland Or Grassland | Fall (Sept/Oct) | Apply first application will be several weeks before planting and second application should be applied one to two weeks prior to planting. <ul style="list-style-type: none"> 1st Herbicide Application Rate: 13-20 ounces of glyphosate ingredient (a.i.) per acre.* 2nd Herbicide Application Rate: 6.5-13 ounces of glyphosate ingredient (a.i.) per acre.* |
| <input checked="" type="checkbox"/> | 5 (Two Applications) | Grassland | Fall (Sept/Oct) And Spring (April) | Fall Herbicide Application Rate: 13-20 ounces of glyphosate ingredient (a.i.) per acre.* Spring Herbicide Application Rate: 26-39 ounces of glyphosate ingredient (a.i.) per acre.* |
| <input checked="" type="checkbox"/> | 6 (Two Applications) | Grassland | Spring (April) And Fall (Sept/Oct) | Spring Herbicide Application Rate: 26-39 ounces of glyphosate ingredient (a.i.) per acre.* Fall Herbicide Application Rate: 13-20 ounces of glyphosate ingredient (a.i.) per acre.* |

* These rates are directly from the University of Kentucky publication "Weed Management In Grass Pastures, Hay Fields, and Other Farmstead Sites" (AGR-172) and based on a 41% a.i. formulation. Specifically, from the *Pasture Renovation or Replacement of Endophyte-Infected Tall Fescue* section. Additional information pertaining to vegetation control can be found in publication AGR-172. Note: Ammonium Sulfate or other additives may be used according to the label.

Filter Strip – Job Sheet

| Purpose (check all that apply) | |
|--|--|
| <input type="checkbox"/> Reduce suspended solids and associated contaminants in runoff | <input type="checkbox"/> Reduce dissolved contaminant loadings in runoff |
| <input type="checkbox"/> Reduce suspended solids and associated contaminants in irrigation tailwater | |

| Layout (see map on next page for more specific details) | Strip 1 | Strip 2 | Strip 3 |
|---|---------|---------|---------|
| Strip width (feet) | | | |
| Strip length (feet) | | | |
| Area in strip (acres) | | | |
| Field slope (%) | | | |

| Plant Materials (species) | Seeding Rate (lbs/acre of pure live seed) | Seeding Dates |
|---------------------------|---|---------------|
| Strip 1: | | |
| | | |
| Strip 2: | | |
| | | |
| Strip 3: | | |
| | | |

| Soil Amend. and Fertilization | Strip 1 | Strip 2 | Strip 3 |
|--|---------|---------|---------|
| Lime per Soil Test (tons/acre) | | | |
| N Fertilizer per Soil Test – (lbs/acre) | | | |
| P ₂ O Fertilizer per Soil Test – (lbs/acre) | | | |
| K ₂ O Fertilizer per Soil Test – (lbs/acre) | | | |

| Site Preparation |
|---|
| <i>Prepare a firm seedbed. Apply lime and fertilizer as indicated by soil testing. Additional requirements:</i> |
| |

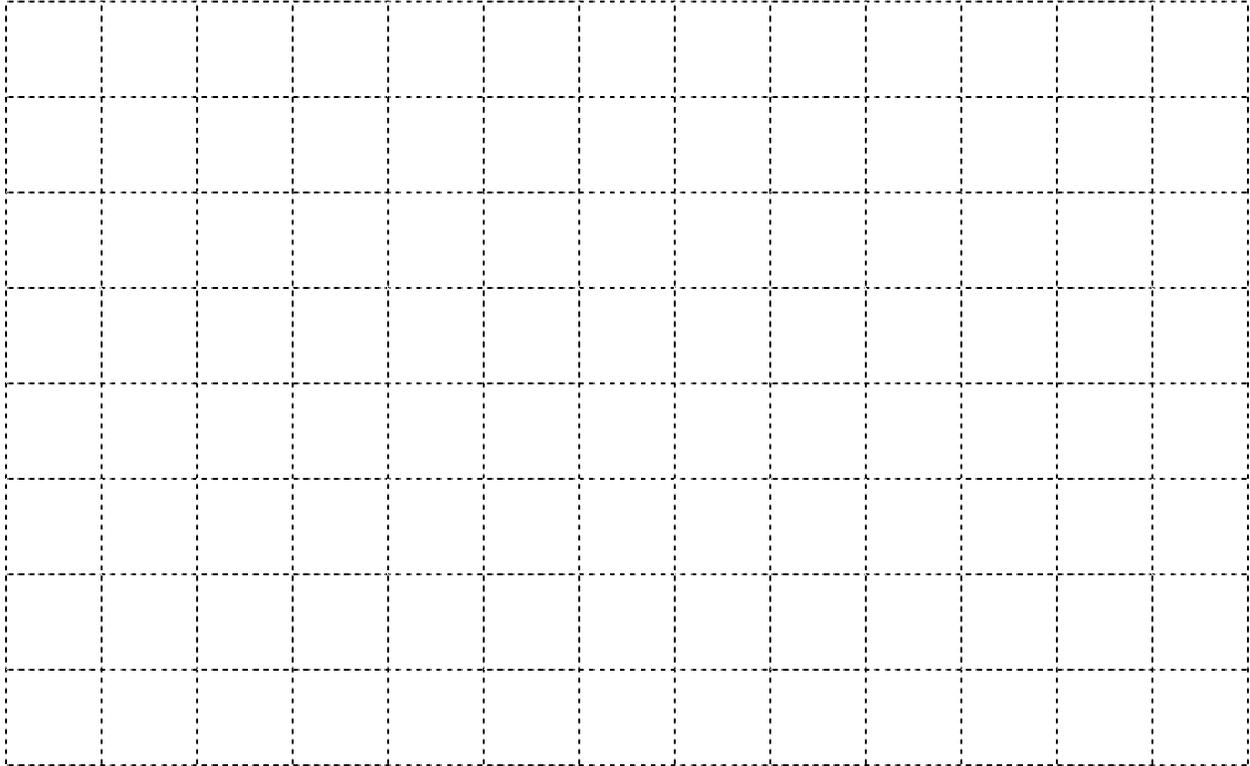
| Planting Methods |
|---|
| <i>Drill grass and legume seed _____ inches deep uniformly over area. Establish vegetation according to the specified seeding rate. If necessary, mulch newly seeded area with _____ tons per acre of mulch material. A small grain crop may be needed as a companion crop at the rate of _____ pounds per acre (clip or harvest before it heads out). Additional requirements:</i> |
| |

| Operation and Maintenance |
|--|
| <i>Maintain original width and length of the filter strip. Harvest, mow, reseed, and fertilize as necessary to maintain plant density and vigorous plant growth. Inspect after major storms, remove trapped sediment, and repair eroding areas. Shut off pesticide sprayers when turning on a filter strip. Additional requirements:</i> |
| |

Filter Strip – Job Sheet

If needed, an aerial view or a Toolkit map can be shown below to identify relative location(s) of the practice. Other relevant information, complementary practices and measures, and additional specifications may be included.

Scale 1"= _____ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")



| Additional Specifications and Notes: |
|--------------------------------------|
| |
| |
| |
| |
| |
| |

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**Attach "KY Filter Strip Design"
Excel Spreadsheet Output Here.**